THE EFFORTS TO INCREASE MATHEMATICAL PERFORMANCE AND MOTIVATION OF UNDERACHIEVER STUDENT THROUGH QUANTUM LEARNING

by Jayanti Putri Purwaningrum

Submission date: 03-Aug-2017 07:33AM (UTC+0700)
Submission ID: 834804260
File name: JAYANTI_PUTRI_P-UNIVERSITAS_MURIA_KUDUS-FULLPAPER.docx (36.83K)
Word count: 5803
Character count: 31801

THE EFFORTS TO INCREASE MATHEMATICAL PERFORMANCE AND MOTIVATION OF UNDERACHIEVER STUDENT THROUGH QUANTUM LEARNING

Jayanti Putri Purwaningrum
Primary School Teacher Education, Universitas Muria Kudus
Email: jayanti.putri@umk.ac.id

Abstract. Underachiever student is a student who has a high level of intelligence but acquire learning achievement below average (low). Underachiever is caused by the way the teacher chooses a model for delivering mathematic materials and treats student during the teaching and learning activities. In addition, lack of motivation and low self-perception of student on the ability to obtain high achievement also becomes the factor causing the student tobe an underachiever. Thus, the teacher's understanding to the underachiever student's character and the implementation of the mathematic learning process to the evaluation and following-up study should be concerned in order to achieve a successful learning. One of the efforts to increase the underachiever student's mathematical achievement and motivation is through quantum learning. Quantum Learning is fun learning that is expected to increase student interest so at last their learning outcomes can be improved overall. Fun learning environment can also create motivation on student that directly affects student learning.

Keynote: Mathematics, learning performance, learning motivation, Underachiever Student, Quantum Learning

A. INTRODUCTION

Education is one of the most important things for all people because the human education is expected to have a good mindset and broad insight so as to become a better human being. Generally, educated people have more experience so that they can make themselves capable of leading it to be useful to themselves and others.

Education should be well planned. Eduction is planned to make students have various skills in life. Efforts are being made so that education can make a significant contribution to the nation. The Government has made a variety of efforts to increase the quality of education, including renewal and upgrading of infrastructure, renewal of the curriculum, the development of effective learning models and innovative, and teacher certification program. These efforts should make the quality of education better.

It needs efforts from students, teachers, parents, environment and government so that a learning process can be managed optimally. Teachers should be able to choose appropriate learning models so that teaching and learning activities can be carried out effectively. In mathematics, the efforts have been done to improve learning achievement that is to choose a model of learning that can include a process of interaction between students and teachers. Thus, the teacher should choose the model of learning that are tailored to the mathematical material presented and the students' characteristics in order to make students participate actively in learning activities.

Indicators of a student achievement is successful in learning mathematics one of which can be seen from the accomplishment obtained. However, not all students can get their achievement in accordance with their potential, many students are not able to show the maximum results. This is due to the fact that the process of learning that students in schools is affected by various factors that lead to their learning outcomes depending on the interaction of factors related to one another. Student's intelligence is one factor that is generally

predicted as the main culprit in reaching student achievement. Thus, the level of intelligence is often used to predict the ability in learning and achievement that would be achieved by the students.

Dalyono (Djamarah, 2002) clearly states that a person who has a high IQ (good intelligence clearly states and the learning outcome also tends to be good. But on the contrary, students with low IQs tend to have difficulty in learning and the academic achievement is low, even they are slow thinking. Djamarah (2002) describes a broader point of view that many studies have shown there is a close relationship between IQ and academic achievement in school. Students with more than 120 IQ are predicted not to have trouble in learning. That stance is in line with Prabu (2002) who states that if a student with a high IQ are in the proper environment they will reach good achievement and success in life. Thus, it is proper to say that IQ of an individual is a guarantee in achieving academic success. However, in reality, many students with high IQs experience difficulty in completing school assignments and have under standardized achievement.

Surya's Research (Sulistiana, 2009) about the high IQ students with less achievement showed that 78 students at one high school in Bandung are classified as having high ability, but about 32 people (41%) students performed worse. Achir's research (Munandar, 2002) at two high schools in Jakarta which were identified from IQ tests and tests of creativity found that 39% of the students are categorized to have low achievement.

The data of these studies suggests that although the number of students with less achievement vary but it is believed that students who get academic achievement that is not up to his potential will always appear in every school. Thus, the level of potential students does not guarantee that tudents can actualize well, in the context of the psychological phenomenon known as an underachiever. Underachiever students are students who have a high intelligence level but earn relatively low educational achievement (Putra, 2013). Underachiever occurs if there is a discrepancy between children's school performance and the index of ability based on tests of intelligence, creativity or from observational data (Munandar, 2004). Relating to the characteristics of the underachiever students, during the process of teaching and learning of mathematics, underachiever students tend to be passive and tend not interested in following the lesson. Thus, they have less motivation to learn mathematics. Moreover, they rarely do their homework, not fast enough to catch the concepts taught by their teachers, and slow in completing the task.

The underachiever students' low motivation to learn mathematics can lead to low achievement of their learning. And if it is ignored then their motivation of learning mathematics will decrease. Thus, efforts by teachers should be made to overcome the problems including teachers understanding about the need of mastering various approaches in learning. Therefore, it is necessary to develop learning approaches that can improve the performance and motivation to learn mathematics. One of the learning models that can be selected is quantum teaching. Quantum teaching is a learning which changes the atmosphere of learning from boring activity into fun activity so that it can improve the performance of students with the framework of learning design called TANDUR: (1) Grow (T); (2) Natural (A); (3) Name (N); (4) Demonstrate (D); (5) Repeat (U); and (6) Celebrate (R) (DePorter et al, 2001).

Based on the explanation above, the purpose of this paper is to theoretically examine quantum learning as an effort to improve the underachiever students' achievement and motivation to learn mathematics. It is hoped that quantum learning can improve the quality and quantity of learning in Indonesia, especially for underachiever students.

B. THEORITICAL STUDY AND DISCUSSION

1. THEORITICAL STUDY

a. Mathematics

Essentially, mathematics covers a very broad field of study, not just about the application of number (numeric), but also deals with matters of geometry and measurement, arithmetic, too, statistics, algebra and problem solving. The question is, what exactly is the meaning of mathematics? To answer these questions, the study on various assumptions of the mathematical meanings is considered very necessary.

Not few people were mistaken about the meaning of mathematics with math or arithmetic. In fact, mathematics is different from arithmetic, mathematics even have a broader assessment than that. Arithmetic is part of mathematics. Sumantri (Jamaris, 2013) explains that "mathematics is the language which symbolizes the significance of a series of statements to be conveyed. The mathematic symbols are artificial and just implies after meanings are given to him ".

Johnson and Myklebust (Rahman, 2010) describe "math is the symbolic language whose practical function is to express the quantitative and spatial relationships whereas the theoretical function is to facilitate thinking. Lerner (Rahman, 2010) further adds that "mathematics not only as a symbolic language, but also a universal language that allows human to think, record, and communicate ideas about the elements and quantity"

In addition to the sense of mathematics as a way of thinking that is expressed through language, math is also a tool of scientific thinking, ie mathematics as a tool to gain scientific knowledge, because mathematics is the highest form of logic that generates the system science of organization, which is logical and can generate a lot of statements in form of mathematical models.

Math is a tool in everyday life. In the daily life almost all the considerations to be taken must get through logical thinking processes by considering the profit and loss, cause and effect or other estimation that would happen. Mathematics also serves as a tool to solve the problem, a tool for communication, means of logical thinking and rationale and tools to facilitate the relationship between individuals.

The conclusion of the various opinions above that mathematics is no longer regarded as a discrete science (the science of discriate) or science related to quantity (the science of quantity). However, the meaning of the math has changed in which the emphasis is more on methods than on the subject of mathematical problems itself.

b. Learning Performance

According Hamalik (2009), learning is essentially a change in behavior which is relatively stable as a result of training and experience, lifelong, anytime, and anywhere, whether at school, in the classroom on the streets at times which can not be predetermined. In the context of designing a learning system, learning concept is interpreted differently. Learning in this case should be done deliberately, well planned with a certain structure. It aims to make the learning process and the achieved results can be carefully controlled.

Learning is an on going process of activity, and an element that is fundamental to the implementation of every type and level of education. In general, learning can be understood as a stage of change of an individual's behavior which is relatively settled as a result of experience and interaction with the environment that involve cognitive processes (Shah, 2014). This may imply that the success or failure of education goals is highly dependent on the learning process experienced by students, both when he was at school and at home environment or his own family.

As a process, learning almost always has a place in a wide range of disciplines related to educational efforts. Therefore, the sense of learning is very important so that the largest part of research efforts and educational psychology experiment was aimed at achieving greater understanding and deep understanding of the human change process.

Someone who experiences a learning process is ideally characterized by the emergence of new positive psychological experiences. The psychic experiences are expected to develop a variety of traits, attitudes and skills which are constructive and not the destructive ones. To achieve the ideal learning outcomes, the ability of teachers to guide students' learning activity is highly demanded. If teachers are ready and have high ability to perform their obligations the expectation on the realization of qualified human resources will definitely be achieved.

In principle, the ideal disclosure of learning outcomes should cover all aspects of psychological change as the result of experience and student learning. However, the disclosure of changes in the behavior of all these aspects is not very easy. This is because there are changes in student learning outcomes that are intangible. Therefore, what teachers can do is to take a snapshot of behavioral changes that are considered important and are expected to reflect the changes that occur as a result of student learning both in the cognitive, affective and psychomotor aspects.

The key point to obtain the data size of student learning outcomes as described above is to determine the indicators pointing their achievements associated with this kind of achievement to be expressed or measured. Thus, achievement is the disclosure of learning outcomes covering all aspects of psychology which has changed as a result of the experience and the learning process of students (Shah, 2011). The learning outcomes of mathematics are the results obtained by students after they followed the process of learning mathematics.

c. Learning Motivation

According to McDonald (1959) the term motivation is "... a change of energy within the person Characterized by affective arousal and anticipatory reactions goal", which is defined as a change in one's personal energy that is characterized by the onset of affective and reaction to achieve the goal. As a problem in the classroom, motivation is the generating process, maintaining, and controlling interests (Hamalik, 2000). Furthermore, Hamalik (2000) explains that the motivation starts from the energy change in the person characterized by the emergence of feelings (affective) and motivation is characterized by reactions to achieve the goal.

Motivation has two components, namely inner component and external components (outer component). Inner components is personal change of a person, it is the circumstances of not being satisfied and psychological tension. Outer component is a component which a person wants, the goal to which his/her behavior goes. Thereafter, the differences of inner component and outer component is related to the needs to be satisfied while the external component is an objective to be achieved.

The function of motivation is as a promoter, director and driver of person's behavior to achieve a goal. At school, teacher is an important factor to seek for the implementation of these functions primarily to meet the needs of students. These needs include psychological needs, the need for security and safety, the need to be accepted and loved, the need for self-esteem and the need to realize themselves.

Motivation and learning are two things that are interrelated with each other. Essentially, learning is a change in behavior which is relatively permanent and potentially occurs as a result of practice or reinforcement (reinforced practices) that is based on the aim to achieve the specific objectives.

Learning motivation as Sardiman (Winkel, 1997) argued is the overall power of activator within the students who lead learning activities, which ensures the continuity of

learning activities and provide direction on learning activities so that the desired objectives can be achieved by students. In other words, the motivation means a driver of the students to lead learning activities and provide direction on learning activities so as to achieve the desired aim.

Motivation of learning arises partly because of the intrinsic factors, such as desires and wishes for success and encouragement of learning need, expectations of ideals (dream). Besides, it can also arise from the extrinsic factors, namely award, a conducive learning environment and engaging learning activities. However, keep in mind that these two factors are mentioned by certain stimuli so that one is willing to conduct learning activities more vigorously and spiritfully.

Motivation is defined as internal and external encouragement of students who are learning to make changes in behavior, which is generally with some supporting elements. It has a big role in a person's success in learning. Indicators of motivation to learn are as follows: (1) the desire to succeed; (2) lack of motivation and learning needs; (3) their hopes and ideals of the future; (4) the award in learning; (5) the activity of interest in learning; and (6) the existence of a conducive learning environment that allows students to learn well.

Developing students' motivation can be done by giving praise (compliment). It is considered more effective than punishment. In addition to giving compliments, another technique to motivate students can also be done by giving awards or rewards, grades and level of success and inspiration, praise, competition and cooperation.

d. Underachiever Student

School achievement is nowadays one of the most important things often regarded as a major part of the measure of success or failure of students in carrying out his/her duties at the school. School achievement is generally used as a determinant of child's further step, for example in selecting secondary school. The benchmark for students in choosing good or not good secondary school is usually based on school performance achieved at the level of previous education. To get a good junior high school, students must get a good performance in primary school.

However, not all students have a school performance. If the failure is due to the low ability of the students so it is a natural thing. However, if students with good skills but resulting in poor performance then surely there must be a problem that must be addressed. A concrete example as suggested by Putra (2013) is a matter of talented and genius childred with low achievement (underachiever) such as Albert Einstein, Thomas Alva Edison, Leonardo Davinci, Orlando Bloom, and many great man of the world, they encountered the problem in their childhood. Albert Einstein is one of the hundred world leaders based on Michael H. Hart version since the discovery of the theory of relativity which is phenomenal but he in fact never earned a school diploma. Thomas Alva Edison is a renowned expert with brilliant discoveries, such as electricity, lights and others who also do not have a diploma. In fact, Edison was considered an idiot and suffered from mental illness by his teacher that was forced out of primary school in class 3. However, thanks to the hard work of her mother, he managed to be a great person and his name is included in a hundred influential figures in the world. Thus, gifted students with low achievement are not stupid students, but they had problems at school.

Underachiever students or students with performance below its capabilities is a discrepancy between the performance at school and students' abilitiy index as a real of the intelligence tests, achievement, creativity or data from observation (Munandar, 2004). In other words, underachiever students potentially have a high level of intelligence and has a significant possibility to obtain high academic achievement. However, in reality these students have learning achievement under the abilities they possess (Putra, 2013). Gustian

(2002) stated that underachiever students are students with low learning achievement compared with its level of intelligence.The low achievement is not caused by the presence of obstacles in mastering the lessons learned in the learning process.

Unlike the students who experience barriers to learning (learning disabilities) or physical disorder problems, underachiever students find no barriers to be able to master certain skills. Underachiever students can write, read and count, but did not have high achievement in school in accordance with the level of intelligence. In other words, underachiever students are a bright student with grades 6 or even below 6.

The phenomenon of underachiever students in Indonesia known referring to a number of studies that have been done. Based on study results done by Nurhayati (Sulistiana and Muqodas, 2015) on students at SMA N 4 Bandung, it shows that of the 250 students having intelligence above 120, it was found 16 students (12.8%) categorized as underachiever with the average score below 6, whereas when seen from the average of academic achievement, of the 306 students of class XI, as many as 76 (24.8%) students are found to be underachiever. Other studies on underachiever student conducted by Sulaiman (Putra, 2013) showed that 30% of students who cannot complete his/her study at the high school level have the intelligence level of less than 130.

The research results above describe that although the number of achieving students is only few, but it is believed that students who get academic achievement that is not up to his potential will always exist in every school. Therefore, the phenomenon shows that the level of students' potential do not give a guarantee that they can actualize well.

Gustian (2002) stated that the cause of an underachiever among others came from environmental factors, a good school environment, home or on the students themselves. Each of these factors or in combination can cause students to become underachiever.

1) School environment as a cause of underachiever

   School is a factor that plays an important role in the occurrence underachiever students. In addition to this, teaching strategy, materials provided, and measures of success and the ability of teachers can also cause underachiever.

2) Factors of teachers

   Teachers also play an important role in students' school achievement because teacher is the one transferring knowledge to students. The treatment of teachers to their students will also affect the children's achievement.

3) Family and Home Environment

   Besides school, home environment can also cause underachiever students. How do people treat children nearby will affect the achievement of children. Parent is a figure that plays important roles in determining the success of children. The study on students who succeed at school shows the role of parents in determining their success. Attention, support, and readiness to help the children are the traits of the parents whose children succeed in school.

4) Factors within the individual

   a) Self Perception

      Failure to achieve good school performance is also determined by the characteristics of each student. One of them is their assessment on the capabilities they have. Assessment of these capabilities have greatly affected the achievements of the school. Students who feel they were able will do efforts to get a good school achievement in accordance with the assessment of his/her ability. In contrast, students who considered themselves unable or consider himself a fool would assume the less values they acquired as the appropriate thing to they must receive.

      Perception of children, is also related to their self-esteem. Self-esteem is a judgments of others about himself/herself. Students who have high self-esteem would

have desire to get high achievement because they want the achievement in accordance with the assessment of their capabilities. On the other hand, students who have low self-esteem will not be motivated for higher achievement.

b) Desire of Achievement

Another inside factor of underachiever student are the desire factor for achievement itself. There are students who have inner drive to get their achievement, but on the other hand there are also students who do not have the encouragement of achievement. The desire for achievement is the result of the experiences of students in doing something. Students often do not succeed in doing something will experience frustration and do not expect good results from the actions he did.

Inner motivation within every student to or not to reach learning achivement are caused by two things, the intrinsic factors of the students (instrinsic motivation) and from outside the student (extrinsic motivation). Students who have an urge within him/herself is not much influenced by outside factors of themselves to be successful in learning, while the encouragement of students coming from outside, such as prize or praise will be very dependent on things outside themselves. Students who have a high evaluation on learning achievement will be highly motivated to reach the learning achievement, and vice versa.

c) Locus of Control

How each student assess his/her achievement which can lead to failure of achieving high performance. They can assess whether their achievement is because of the effort they have done or because of external factors beyond their control.

Students who considered that the cause of achievement is caused by the factor of effort that have been, he/she is considered to internally have locus of control (internal locus of control), and otherwise he/she is said to have an external locus of control. The existence of locus of control factor enables students to assess and do the things that make it performed well, and it can only be done by those who have an internal locus of control. The results showed that students who have an internal locus of control will perform better than students who have an external locus of control.

d) Learning Patterns

Learning pattern greatly affects student achievement. There are students who only learn when there is only a course test, some learn on a regular basis even though no tests. Thus, the pattern of learning is the result of a student habit. Students whose learning pattern is regular will certainly have better achievement at school than students who do not have a pattern of learning.

e. Quantum Learning

Huda (2014) revealed that the quantum learning is learning by familiarizing a fn learning. By implementing this learning type it is expected to be able to improve student learning motivation so that the students learning outcomes can also be increased as a whole. Furthermore, Huda explains that quantum learning is a set of methods and philosophy of learning that have been proven effective in schools and businesses for all types of people in all ages. Quantum combines the positive suggestions of learning and their interaction with environment which may affect the student`s learning process and outcomes. A fun learning environment can lead to motivation on students that can directly affect their learning process.

Quantum learning has a learning frame of TANDUR which is of the acronym of *Tumbuhkan* (Grow), *Alami* (Natural), *Namai* (Name), *Demonstrasikan* (Demonstrate), *Ulangi* (Repeat) and *Rayakan* (Celebrate) (DePorter dkk, 2001). The followings are the explanation of the acronym.

1) Grow

Growing interest satisfactorily, such as "What are the benefits for me" (WIIFM) and take advantage of student life. WIIFM is the motivation gained through elections mentally between the benefits and consequences of a decision. Motivation is very necessary to learn because of the motivation, the desire to learn will always be there. At this stage, the teacher should provide motivation to the students so that they can identify and know the benefits or meaning of any experience or event, in this case the learning process.

2) Natural

Create or bring common experiences which can be understood by all students. In the process of learning and teaching, environmental regulation is necessary to make students feel safe and comfortable. Such feelings will foster student to learn with good concentration. Structuring the right learning environment can also prevent boredom in students.

3) Name

Provide keywords, concepts, models, formulas, strategies. One activity that is quite important is reading. This is because, by reading, students can improve vocabulary, understanding, insight, and her/his memory. A teacher should familiarize students to reading, both textbooks and other books. Memory power is indispensable in learning, so students need to be trained to get the power of a good memory.

4) Demonstrate

Provide opportunities for students to "show that they know". There is a wide variety of learning styles of the students. Learning styles include: visual, auditory, and kinesthetic. In quantum learning, teachers should give freedom to the students to learn and not fixated on one learning style. Creative students are those who want to know, like to try and play. Creative attitude allows students generate fresh ideas in learning.

5) Repeat

Show students a variety of ways to repeat the matter and insisted that "I know that I do know this." Learning to be truly understood as a creative activity when students are not only able to receive, but can restate what is obtained by using the language of living in a manner and appropriate expressions of student learning styles themselves. This can be done by providing symbols or images that are easily understood by the students themselves. These symbols can be text or code that can be understood by students.

6) Celebrate

Recognition for completion, participation and acquisition of skills and knowledge. Cultivating the attitude of a champion needs to be done to encourage student to learn. A teacher should not hesitate to give praise or gifts to students who have been successful in learning. Instead, teachers should not decry or deride students who have not been able to master the material. By cultivating the attitude of a champion, students will feel more appreciated.

Quantum Learning is a combination of various interactions that include elements of effective learning that affect student success. The concept of quantum learning is the students bring to our world and deliver our world into their world. Teacher's step to enter the world perceived by the students will allow teacher to guide and direct the students' awareness of the importance of learning.

Quantum learning has excellent benefits to increase the potential for academic (learning achievement) and the creative potential within the students themselves. However, on the other hand, it also has disadvantages, those are: (1) requires the design and preparation of learning which is quite prepared and well-planned; (2) require and demand the expertise and skills of teachers more specifically; and (3) not all classes have the learning resources,

learning tools, and facilities that serve as prerequisites for quantum learning, besides the learning also demands better situations and conditions and more time (Huda, 2014).

2. DISCUSSION

Students who have difficulty to follow a math lesson in the school have a variety of causes. Typically, the main causes of low achievement of learning tends to be the level of intelligence possessed. Many researches say that when students have the potential of high intelligence then they will not have difficulty in achieving at school. However, in reality only few students who have learning achievement which are exactly in line with the capacity they have.

Underachiever students are students who have a gap between the potential of the learning achievement obtained. The potential of the students as initial capital in the learning process in schools is measured by intelligence tests while academic achievement acquired in school is measured by the results of the evaluation conducted by the teacher.

The underachiever student's characteristics as disclosed by Clark (Tol'ah, 1992), are: (1) the progress is contrary to expectation or potentiality; (2) has no sense of liking with the teacher or school; (3) likely to join friends who have a negative attitude in school; (4) motivation to learn is less, sleepy, do not do chores or when working, it is often not complete; (5) feeling less passionate and often get noisy when being in the classroom; and (6) has low dicipline and often coming late in the class. Montgemery (Tarmidzi 2008) adds that underachiever students do not have motivation to learn in school so that their achievement is below the expectation in one lesson, part or even the whole.

One of the ways that can be used by teachers to improve underachiever student's achievement and motivation to learn math is by implementing quantum learning. The excellence of applying quantum learning in mathematics, are among others (1) This learning can improve achievement and motivation to learn mathematics; (2) provide students the opportunity to relate the material to be examined with everyday life; (3) engage students actively in learning (student centered); and (4) provide comfort to the students learning environment.

Quantum learning can create interaction and student activeness so the ability, talent and potential of the students can develop which in turn can give impact of maximal learning achievement. In the learning process of quantum learning there will be alignment and empowerment of learning communities so that teachers and students get involved in the learning process equally pleased with each other and work with each other.

The principles of quantum learning as suggested by Herdian (2009) are: (1) Everything speaks; (2) The learning process is posited as a symphony orchestra; and (3) learning should give an impact on the formation of excellence. Guided by these principles, the quantum learning can improve student achievement and learning motivation, especially in mathematics.

The strong points of quantum learning which becomes the consideration of why this learning can improve achievement and motivation to learn mathematics, are among others: (1) humanistic; (2) constructive; (3) rooted in cognitive psychology; (4) emphasis on accelerated learning with a high level of success; (5) focus on meaningful learning; and (6) inculcate positive beliefs. Based on these advantages, achievement and motivation to learn math by using quantum learning is not something impossible.

C. CONCLUSION AND SUGGESTION

1. CONCLUSION

Every child is born with the different ability and potential. The state owned by the underachiever students is when they are not able to reach certain achievements which in fact

they have a good potential for achievement that must be achieved. The causes of underachiever are among others, the unpleasant learning experience of students in the classroom, the learning styles of students which are different from the teaching styles of the teachers and the teachers do not tolerate it, frustration due to pressure from parents, and so forth.

Quantum Learning is an innovative learning that can be applied to improve the performance of teachers and underachiever students' motivation to learn math. This is because quantum fun learning is learning that is expected to increase underachiever student's interest so that finally they can increase the learning outcomes overall. Pleasant learning environment can also lead to motivation on underachiever students that directly affect their learning process. The stages that exist in the quantum learning are expected to facilitate various development of underachiever students' mathematical abilities and increasing the quantity and quality of teaching and learning activities in the classroom so that achievements and their motivation to learn math are more optimal.

2. SUGGESTION

a. Most underachiever students assume that mathematics is a difficult subject so that teachers in schools should provide sufficient guidance and training so as to improve achievement and motivation to learn math optimally.
b. Students underachiever requires the allocation of sufficient time to study the material of abstract mathematics that need to be considered by the teacher.

D. ACKNOWLEDGEMENTS

The writer would like to express her gratitude to Mr. Purwoko Bagus Riyanto, S. Pd., Mrs. Widahlia and Mr. Galih Kurniadi, M. Pd. who have given prayer and motivation to her to continue producing academic work.

E. REFERENCES

Abdurrahman, M. 2010. *Pendidikan bagi Anak Berkesulitan Belajar.* Jakarta: Rineka Cipta

DePorter, B. dkk. 2001. *Quantum Teaching: Mempraktikkan Quantum Learning di Ruang-ruang Kelas*. Bandung: Mizan Media Utama.

Djamarah, S. B. 2002. *Rahasia Sukses Belajar.* Jakarta: PT Rineka Cipta

Gustian, E. 2002. *Menangani Anak Underachiever dengan Prestasi Rendah*. Jakarta: Puspa Swara

Hamalik, O. 2000. *Psikologi Belajar dan Mengajar.* Bandung: Sinar Baru Algensindo

_____. 2009. *Perencanaan Pengajaran Berdasarkan Pendekatan Sistem*: Jakarta: Bumi Aksara.

Herdian. 2009. *Model Pembelajaran Quantum*. Available in http://herdy07.wordpress.com/2009/04/29/model-pembelajaran-quantum/. Accessed 4 April 2016

Huda, M. 2014. *Model-model Pengajaran dan Pembelajaran.* Yogyakarta: Pustaka Pelajar.

Jamaris, M. 2014. *Kesulitan Belajar, Perspektif, Assesmen, dan Penanggulangannya*. Bogor: Ghalia Indonesia

McDonald. 1959. *Educarional Psychology*. San Fransisco: Wadswerth Publishing Company, Inc.

Munandar, U. 2002. *Kreativitas dan Keterbakatan Strategi Mewujudkan Potensi Kreatif dan Bakat.* Jakarta: PT Gramedia Pustaka Umum.

Prabu, A. A. A. 2002. *Perkembangan Taraf Intelegensi Anak.* Bandung: Angkasa

Putra, S. R. 2013. *Desain Belajar Mengajar Kreatif Berbasis SAINS.* Jogjakarta: Diva Press.

Sulistiana, D. 2009. *Program Bimbingan bagi Siswa Underachiever di SMA Negeri 11 Bandung*. Skripsi. Fakultas Ilmu Pendidikan, Universitas Pendidikan Indonesia.

Sulistiana, D. Dan Muqodas, I. 2015. Upaya Bimbingan Bagi Siswa Underachiever. *Metodik Didaktik, Vol. 10, No. 1*, Juli 2015, hlm. 1-15

Syah, M. 2011. *Psikologi Belajar.* Jakarta: Rajagrafindo Persada.

Syah, M. 2014. *Psikologi Pendidikan dengan Pendekatan Baru.* Bandung: PT Remaja Rosdakarya Offset.

Tarmidzi. 2008. *Konsep Diri Siswa Underachiever.* Available in http:// tarmidzi. Wordpress.com/2008/05/27/konsep-diri siswa. underachiever. Accesed tanggal 4 April 2016

Winkel, W. S. 1997. *Bimbingan dan Konseling di Institusi Pendidikan.* Jakarta: PT Gramedia.

THE EFFORTS TO INCREASE MATHEMATICAL PERFORMANCE AND MOTIVATION OF UNDERACHIEVER STUDENT THROUGH QUANTUM LEARNING

GRADEMARK REPORT

FINAL GRADE

/0

GENERAL COMMENTS

Instructor

PAGE 1

PAGE 2

PAGE 3

PAGE 4

PAGE 5

PAGE 6

PAGE 7

PAGE 8

PAGE 9

PAGE 10

PAGE 11